

MISSISSIPPI STATE UNIVERSITY



The Spring 2026 Undergraduate Research Symposium featured thirteen special area competitions (SACs). Designed to provide discipline and category-specific recognition of excellence in student scholarship, SACs are sponsored by a variety of undergraduate research partners across Mississippi State University.



MISSISSIPPI STATE UNIVERSITY™
UNDERGRADUATE RESEARCH
AND CREATIVE DISCOVERY

3Minute Research Pitch

The 3Minute Research Pitch challenges undergraduates to present their research topic in just three minutes and with a single slide.

Christopher Jolivette (149), Mentor: Allison Jaeger Berena
Can Wrong Be Right?

1st

Vineel Vanga (291), Mentor: Galen Collins
Does Ubiquitin Activate Ddi2 in trans?

2nd

People's Choice

Lela Rose (31), Mentor: David Van Den Heever
Birth Control or Brain Control? An FPVS and EEG Study



Bagley College of Engineering Undergraduate Research Award

Undergraduate engineering projects are eligible to receive the Visual Display of Information or Cross-Disciplinary Research Award.

Visual Display of Information Awardee

Lonnie Tankersley (67), Mentor: Shinde Vilas
Development of an Interactive, High-Fidelity Circuit Modeling Tool for Inductively-Coupled Pulsed Accelerators



Cross-Disciplinary Research Awardee

Callie Simon (63), Mentor: Christopher Hudson
A Real-Time, Markerless Computer Vision Pipeline for Lameness Detection in Dairy Cattle



Gulf Coast Research Award

The Gulf Coast Research Award highlights projects that address issues facing the Gulf Coast.



Grant Holladay (145), Mentor: Justin Pinta

The Mississippi Gulf Coast's Lost Tongue: The Vestiges of French in Coastal Mississippi



Skylar Bates (195), Mentor: SaMin Han

Common Grounds: A Resilient Landscape Strategy for Flood Adaptation and Community Connection in East Biloxi, Mississippi

Biomedical Research Competition

This competition is for students studying life sciences and/or engineering and who have conducted research related to preventing, diagnosing, or treating a human medical condition.

1st

April Guo-Yue (231), Mentor: Carl June

Determining the Impact of IL-12 and IL-18 Treatment on CAR-MAIT Cell Anti-Tumor Response

2nd

Rayne Rutherford (276), Mentor: Nick Cochran

Advancing Regulatory Genomics in Alzheimer's Disease with Machine Learning and Single-Cell Data Integration

3rd

Spencer Lile (249), Mentor: Christopher Johnson

Enhanced Structural Predictions of Voltage Gated Calcium Channels

College of Education Special Area Competition

This award recognizes excellence in research performed by undergraduate students working with CoE faculty or staff.

Judd Albans & Tyner Albans (126), Mentor: Neil Deochand
*Seeing Plaque, Changing Care: A Systematic Review of Plaque
Disclosing Agents*

1st

Johanna Hilbun (107), Mentor: Leo Chen
*Perceived Balance, Physical Function, and Body Composition
in Active Older Adults: A Preliminary Analysis*

2nd

Cristopher Cordova (106), Mentor: Guillermo Oviedo
*Functional Fitness Tests as Predictors of Cardiovascular
Health in Mississippi College Students*

3rd

College of Forest Resources and the Forest & Wildlife Research Center Award

This award recognizes excellence in research performed within the CFR/FWRC.

Rilee Welliver (296): Curtis Coleman
*"What's The Buzz?" - Precision and Efficiency Comparison of
Human vs. Automated Honey Bee Counting Methods*

1st

Allie Wilburn (297), Mentor: Dana Morin
*Assessing potential biases in social media reports for
monitoring of range expansion of black bears*

2nd

Madeline Grantham (229), Mentor: Ashley Schulz
*Hidden Biodiversity: Arthropod Responses to Forest
Heterogeneity*

3rd

Tomorrow Builder Award

This award, sponsored by the Theta Tau Professional Engineering Fraternity, recognizes one engineering undergraduate who uses their research to help solve problems of critical importance to society.



Emma Cook (14), Mentor: Santanu Kundu

Sustainable Material Design: The Effects of Calcium Ion Concentration on Alginate Fiber Formation

Psychological Science Undergraduate Research Award

Selection criteria for this award include significance to the field of psychology, innovation, approach, and presentation.

1st

Elizabeth Nichols (169), Mentor: Michael Pratte

The Soap Opera Effect: How High Video Refresh Rates Affect Perception

2nd

Christopher Jolivette (149), Mentor: Alison Jaeger Berena

Doing right the wrong way: Integrating across representations supports learning from erroneous examples.

MSU Libraries Research Award

This award is designed to recognize undergraduate student research that incorporated the use of library resources and/or services.



Amanda Gutierrez (29), Mentor: Jessica Pattison

From Farm to Space: Evaluating Sericulture-Derived Silk for Sustainable Spacesuit Design

The Humanities Special Area Competition

The Humanities Special Area Competition invites undergraduate students to share outstanding work that demonstrates the insights, values, and real-world impact of humanities scholarship.

Tess Higginbotham (91), Mentor: Aaron White
Drawing as Pedagogy in Architectural History

1st

Bradley Tedford (124), Mentor: Morgan Flow
A 'State-Sanctioned Amnesia': How History Shaped and Stunted Mississippi's Curriculum

2nd

Runners Up

Lauren Rounds (120), Mentor: Lara Dodds
The Beast Born of Beauty: A Study of Humanness through Beauty within Frankenstein



Bradley Burke (115), Mentor: Christian Flow
Swineherds and Centrality: How Eumaeus Relates to Odysseus



Public Health Research Competition

This award is designed to highlight the important work that undergraduate students at MSU are doing in public health.

Margaret Keith (150), Mentor: Holli Seitz
Evaluating the Effectiveness of HappyHealthy Social Media Posts Using Eye-Tracking and Survey Methods

1st

Maggie Burnett (205), Mentor: Nicole Ashpole
Comparing Morphological Effects of Minor Endocannabinoid Pathways in Zebrafish

2nd

Meri Logan Jackson (148), Mentor: Mary Nelson Robertson
Building Cross-Sector Understanding of Farm Stress Through the "On the Farm" Docuseries

3rd

George Hopper Excellence in Undergraduate Research Award

This award recognizes excellence in research from students in the College of Agriculture and Life Sciences.

1st

Dilber Annageldiyeva (191), Mentor: Maryam Mohammadi-Aragh
Impact of Hatchery Location and Flock Age on Hatching Egg Bacterial Abundance

2nd

Makayla Walker (293), Mentor: Kelsey Harvey
The Impact of Maternal Aggression in Beef Cattle on Productivity

3rd

Molly Montoya (258), Mentor: Federico Hoffman
Transcriptomic Responses to Weaning: Identifying Differentially Expressed Genes in Abrupt vs. Fence-line Weaned Calves

Honorable Mentions



Emma Grace Koger (246), Mentor: Brandi Karisch
AI-Based Fly Detection in Cattle Using Video Surveillance for Improved Farm Efficiency and Animal Welfare



Sydney Baker (128), Mentor: OP McCubbins
Exploring Perceptions of 360 Video and Virtual Reality



Cadence Jackson (239), Mentor: Leyla Rios de Alvarez
Physiological Variables Associated with Heat Stress in Kiko and Spanish Goats Grazing in Summer Conditions in Mississippi



Rachel Bowers (88), Mentor: Jason Walker
Mapping Access: A GIS-Based Analysis of Park Accessibility in Starkville, Mississippi



Quinn Durfey (219), Mentor: Tongyin LI
Applications of biostimulants in the production of specialty sweet pepper cultivars

Data Science Academic Institute Special Area Competition

The data science SAC recognizes projects that excel in one of three categories: basic research that deepens human knowledge of the underlying methods or techniques central to the field of data science, use-inspired research that advances the field of data science based upon a clear potential use case, and applied research that addresses a well-defined problem by applying data science methods and principles. The innovation award recognizes the best overall project chosen from among the category awardees.

Outstanding Basic Data Science Research Projects

Manning Littlejohn, Isabella Garrard, Kallen Zhou, Mentor: Jonathan Barlow

A Scoping Review of Sycophancy in Large Language Models: Operational and Theoretical Recognition



Kellie Watts (74), Mentor: Jonathan Barlow

The Trust-Performance Problem (TPP): Measuring Calibrated Trust in Business AI Systems through Behavioral Decision Tasks



Outstanding Use Inspired Data Science Research Project

Rayne Rutherford (276), Mentor: Nick Cochran

Advancing Regulatory Genomics in Alzheimer's Disease with Machine Learning and Single-Cell Data Integration



Outstanding Applied Data Science Research Project

Lonnie Tankersley (68), Mentor: Soroush Korivand

Embodied Zero-Shot Task Planning via Hardware-Aware LLM-VLM Integration for Physically Grounded Robotic Manipulation



Data Science Innovation Award

Rayne Rutherford (276), Mentor: Nick Cochran

Advancing Regulatory Genomics in Alzheimer's Disease with Machine Learning and Single-Cell Data Integration



THANKS TO OUR HOSTS!

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- ✦ **Steve Elder, PhD** - Department of Agricultural and Biological Engineering
- ✦ **Kristine Evans, PhD** - College of Forest Resources
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